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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,396	12/28/2001	Hiroshi Chikuma	040679-1425	2090

22428 7590 03/11/2004

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

ROSENBAUM, IRENE CUDA

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 03/11/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,396

Applicant(s)

CHIKUMA ET AL.

Examiner

Irene Cuda-Rosenbaum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 2,3,7 and 8 is withdrawn in view of the newly discovered reference(s) to Zapawa (4,611,375). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

Claims 1-4 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zapawa(4,611,375) in view of park et al (5,464,145)

Zapawa teaches a method of making a heat exchanger including arranging tubes at a predetermined pitch on a set base (see col 7, lines 46-49), inserting fins into spaces each defined between the tubes (see column 7, lines 60-64), compressing the tubes and the fins in a direction of arrangement thereof (see col 8, lines 14-33) and mounting the hollow headers to longitudinal ends of the tubes, each header having slits engaged with a corresponding end of the tubes, the hollow headers mounting being carried out by pressing the headers against a header positioning member (see column 7, lines 22-25; it is inherent in the "mounting of the header to the header carrier that it is pressed against the carrier and that it is held to the positioning member by some means, which would include general clamping). Zapawa fails to specifically teach that the ends of the headers are closed with end caps. Park et al teach that it is old and well known to close the ends of headers with end caps. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method as taught by Zapawa by using end caps to close the ends of the headers, since if the ends

of the header are open they inherently need to be close in order for the heat exchanger to work, and Park et al teach the use end caps to close the ends is the conventional method. Claim 3 does not contain any method setps and therefore does not further limit the base claim.

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zapawa in view of Park et al as applied to claims 1-4 above, and further in view of Makino et al. Zapawa in view of Park et al teach the method essentially as claimed but lack a teaching of manufacturing a second heat exchanger in conjunction with the first heat exchanger as claimed. Makino teach that it is old and well known to manufacture the two heat exchangers in combination as claimed for the purpose of achieving better heat transfer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method as taught by Zapawa in view of Park et al by making a combination heat exchanger as claimed , since to do so is old and well known in the art for the purpose of achieving better heat exchange as taught by Makino et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosureAny inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Cuda-Rosenbaum whose telephone number is 703-308-1792. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Vidovich can be reached on 308-1148. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ICR

D C. H. R.
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